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PROCEDURE INSTRUCTION LETTER NO. I08-V-8

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SUBJECT: Procedures for Inspection of Seals

Scope

This Procedure Instruction Letter (PIL) applies to all Coal Mine Safety and Health enforcement personnel and Technical Support personnel.

Purpose

The purpose of this PIL is to establish uniform procedures for the application of the Mine Safety and Health Administration (MSHA) regulations regarding seals and provides guidance on seal inspections, monitoring of the sealed atmosphere and inspection requirements during seal construction. MSHA published a final rule on sealing abandoned areas in coal mines on April 18, 2008. The final rule incorporates several significant changes from the Emergency Temporary Standard (ETS) issued on May 22, 2007. These changes include (1) sampling whether seals are ingassing or outgassing; (2) replacement of the monitoring protocol and action plan with specific regulatory requirements, including requirements for withdrawal of miners; (3) for mines with a demonstrated history of carbon dioxide or where inert gases have been injected, a provision to allow the District Manager to approve an alternative method to evaluate sealed areas to determine if they are inert; (4) prohibition of metallic water drainage pipes and sampling pipes in seals constructed after October 20, 2008, and; (5) a provision to allow the District Manager to approve welding, cutting and soldering with an arc or flame within 150 feet from a seal. This PIL supersedes PIL I07-V-04.

Procedure Instruction

All seals, except those specified as gob isolation seals in the ventilation plan that are no longer accessible, shall be inspected each quarter. Also, it may be necessary to inspect seals during spot inspections pursuant to Section 103(i) of the Mine Act.

During the inspections, the following evaluations must be conducted:

1) Before going underground, review examination record books concerning seals and adjacent air courses, including the sampling records under § 75.336(e). Any hazardous conditions noted by the seal examiners recorded in the weekly or preshift exam books should be investigated. Review seal construction records under §§ 75.335(c)(1) and (2), §§ 75.337(c)(5), (d) and (e);

2) Inspect safe access for the examiner's route of travel to and from seals. Roof support must be maintained to provide safe access to the seals. Check for hazardous conditions, test for methane and oxygen deficiency and determine if the air is moving in the proper direction (§ 75.360(b)(5) and §§ 75.364(b)(4) and (c)(3));

3) Verify the required operators' examinations by checking initials, dates, and times;

4) Inspect seals for deterioration and for structural damage such as cracking, spalling, or bulging. Inspect the base of the seal for deterioration due to mine water and floor heave. Although some spalling of ribs and sloughing from the roof may accumulate near the seal, enough of the seal must be kept clear to facilitate a reasonable visual examination;

5) Inspect the strata surrounding seals for rib sloughing, roof falls or floor deterioration that may affect the integrity of the seal; and

6) Evaluate rockdust around the seals and in the adjacent air course(s);

7) Inspect sampling pipes and sample the atmosphere behind the seals. At a minimum, inspectors should sample at one location at each set of seals. Seals that have reached a design strength of at least 120 psi overpressure or greater do not have to be sampled. The determination of seal strength is based on the quality control test results specified in the seal design (§ 75.335(b)(1)(i)) and reported to the District Manager under § 75.337(e)(3) .

Sample the sealed atmosphere whether seals are outgassing or ingassing. Additional sampling locations may be specified in the approved ventilation plan.

Equipment that may be needed includes:

- Permissible vacuum pump with sufficient power to pull a sample through a sampling pipe in seals that are ingassing
- Tubing, adapters, connectors, etc.
- High range methane detector
- Standard range methane detector (less than 5%)
- Oxygen detector
- Carbon dioxide detector (if an alternative method is approved under § 75.336(d)) to determine the inert status of the sealed atmosphere.
- Bags to collect samples
- Double pointed needles
- Gas sample tubes

Pumping must continue long enough to purge the sampling tube and line with six times the volume of the sample system prior to extracting the sample;

8) Inspect the water drainage system and check for lack of air exchange (test with chemical smoke). Examine the drainage pipe system and verify that seals do not impound water or slurry. If a drainage system includes a valve, it must be opened as part of the inspection;

9) Confirm that the certified persons conducting sampling have been trained in the use of the sampling equipment and sampling procedures. Check the required training records and certifications (§ 75.338).

10) New seal installations must be inspected by MSHA during construction. Inspectors should examine both sides of seals during construction. Section 75.337(e)(1) requires the mine operator to notify the District Manager between two and fourteen days prior to commencement of seal construction. An inspection, which may coincide with a quarterly inspection or 103(i) spot inspection, must be conducted during construction of each set of seals. This construction inspection will assist in determining mine operator's compliance with the final rule and ventilation plan including:

- Proper site preparation
- Sealed area preparation
- Seal construction
- Training
- Examinations
- Record keeping including certifications
- Any other requirements specified in the approved ventilation plan

Section § 75.337(e)(2) includes a requirement for the mine operator to notify the District Manager in writing within five days of completion of a set of seals. After construction is completed, seals must be inspected by MSHA during the next regular inspection. The focus of the inspection of newly-completed seals should be to determine the mine operator's compliance with the requirements of the final rule and ventilation plan, including:

- Seal construction
- Quality control tests
- Certifications
- Examinations
- Post-sealing ventilation
- Rock-dusting
- Sampling pipes and water drainage system
- Roof support
- Any other requirements specified in the approved ventilation plan

Background

Adequate seals are crucial to improve protection for miners from explosions and prevent potentially explosive or toxic gasses from migrating into active working areas of underground coal mines. MSHA issued an ETS on sealing abandoned areas on May 22, 2007, and a final rule was published on April 18, 2008.

Authority

The Federal Mine Safety and Health Act of 1977, as amended, 30 U.S.C. § 801 et seq., and 30 C.F.R. §§ 75.335, 75.336, 75.337, 75.338, 75.360, 75.363, 75.364, 75.370 and 75.371.

Filing Instructions

This PIL should be filed behind the tab marked "Procedure Instruction Letters" in the Coal Mine Safety and Health General Inspection Procedures Handbook. This PIL supersedes I07-V-4.

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